

IN THE CLAIMS

Kindly amend the claims as follows:

1. (Currently amended) An apparatus for air-to-air transfer of at least one ordnance unit from a first airborne aerial vehicle to a second airborne aerial vehicle, the apparatus comprising:
 - pylon installed on the second airborne aerial vehicle and intended to receive the at least one ordnance unit transferred from the first airborne aerial vehicle to the second airborne aerial vehicle;
 - an ordnance transfer assembly providing for the carriage of the at least one ordnance unit on a rigid surface from the first airborne aerial vehicle to the second airborne aerial vehicle; and
 - , a disposed storage cradle holds the at least one ordnance unit from the first airborne aerial vehicle to the second airborne aerial vehicle, said cradle holding the at least one ordnance unit externally to the ordnance transfer assembly between the first aerial vehicle and the second aerial vehicle;
 - a power generator device to provide power for the movement of the ordnance transfer assembly.
2. (Previously presented) The apparatus of claim 41 further comprising an ordnance transfer control assembly providing for the control of the arm and the ordnance transfer assembly to enable controlling the movement of the extended arm in a bi-directional, multi-axis movement.
3. (Currently amended) The apparatus of claim 1, wherein the disposed storage cradle is mounted outside the ordnance transfer assembly, hence the at least one ordnance unit held by said cradle is not limited in size by the size of the ordnance transfer assembly.
4. (Previously presented) The apparatus of claim 1 wherein the at least one ordnance unit is an aerial bomb device intended to be released, dropped or ejected from the second aerial vehicle toward a target.
5. (Previously presented) The apparatus of claim 1, wherein the at least one ordnance unit is a missile device to be launched from the second aerial vehicle toward a target.

6. (Previously presented) The apparatus of claim 2 wherein the ordnance transfer control assembly comprises:

a computer device having a memory device to hold software programs associated with the control of the movement of the extendible arm;

a communication device to transfer bi-direction control data, command data and positional information between the first aerial vehicle and the extendible arm;

thereby enabling control for an air-to-air transfer of the at least one ordnance unit from the first aerial vehicle to the second aerial vehicle.

7. (Previously presented) The apparatus of claim 1 wherein the extendible arm assembly further comprises a foldable aerodynamic control surface assembly to provide for aerodynamic lift and control to the extendible arm.

8. (Previously presented) The apparatus of claim 2 wherein the extendible arm assembly further comprises an at least one image acquiring device to provide the arm position-specific images to the ordnance transfer control assembly.

9. (Previously presented) The apparatus of claim 8 further comprising an at least one lighting device to enhance the quality of the arm position-specific images provided to the ordnance transfer control assembly during ordnance transfer occurring under reduced quality lighting conditions.

10. (Previously presented) The apparatus of claim 8 further comprising an at least one night vision device to provide enhanced quality mechanical arm position-specific images during day and nighttime ordnance transfer.

11. (Withdrawn) The apparatus of claim 1 wherein the extendible arm assembly further comprises:

bi-directional movement providing means to drive the arm assembly from or to the first aerial vehicle; and

multi-axis movement providing means to control the arm assembly unit along several axes;

thereby enabling bi-directional and multi axis movement and control of the extendible arm within a trajectory between the first airborne aerial vehicle and the second airborne aerial vehicle.

12. (Previously presented) The apparatus of claim 41 wherein the extendible arm assembly comprises at least two interlinked arm sections coupled together by at least one motorized joint to provide for the movement of the interlinked arm sections in respect to each other.

13. (Previously presented) The apparatus of claim 1 wherein the ordnance transfer assembly comprises;

an ordnance carriage cradle for an in-transfer storage of the at least one ordnance unit, the ordnance carriage cradle comprising

at least two ordnance gripping arms;

a pylon adapter to carry the at least one ordnance unit during an air-to-air ordnance transfer, the pylon adapter comprising:

a mechanical connector to the pylon;

at least one stabilizing surface to be used for stabilizing the pylon adapter to the pylon; and

a multi-fuzing unit to enable fuzing of the at least one transferred ordnance unit.

14. (Currently amended) The apparatus of claim 1 wherein the extendible arm assembly is an extendible telescopic probe assembly comprising at least two telescopic tubes with the base of the extendible arm assembly attached to the first aerial vehicle and the innermost telescopic tube is linked to the second aerial vehicle.

15. (Previously presented) The apparatus of claim 14 wherein the arm assembly comprises at least two interlinked mechanized arm sections joined by motorized links and providing movement of the mechanized arm sections in respect of each other.

16. (Currently amended) The apparatus of claim 12 wherein the arm assembly comprises a ordnance transfer assembly connected to the second end of the arm assembly, the ordnance transfer assembly comprising an ordnance carrier cradle equipped with gripping arms to secure at least one ordnance unit to the ordnance carriage cradle.

17. (Previously presented) The apparatus of claim 16 wherein the transferable ordnance assembly comprises a pylon adapter unit carried by the ordnance carriage cradle, the pylon adapter unit to carry an at least one ordnance unit and to be attached to a pylon uploaded on a weapon station on the second airborne aerial vehicle.

18. (Withdrawn) The apparatus of claim 1 wherein the extendible arm is an extendible boom assembly attached at one end to the first airborne aerial vehicle, the boom assembly comprising:

an internally mounted ordnance conveyor mechanism enclosed in a rigid or semi-rigid tube for the feeding of the at least one ordnance unit from the first airborne aerial vehicle to the second airborne aerial vehicle;

at least one foldable aerodynamic lifting and control surface to provide for the controlling of the boom assembly; and

an ordnance carriage cradle installed at the second end of the boom assembly.

19. (Withdrawn) The apparatus of claim 1 wherein the extendible arm comprises at least two interlinked arm sections having at least one motorized joints to provide for the movement of the interlinked arm sections in respect to each other, the arm comprising:

an externally mounted ordnance conveyor mechanism enclosed in a rigid or semi-rigid tube connected to the at least two interlinked mechanized arm section to provide for the feeding of an at least one ordnance unit from the first airborne aerial vehicle to the second airborne aerial vehicle;

an at least one aerodynamic lifting and control surface to control maneuvering of the extended arm; and

an ordnance carriage cradle installed at the second end of the arm to receive an at least one ordnance unit fed by the ordnance conveyor mechanism and attach the at least one ordnance unit to a pylon attached to a weapon station on the second airborne aerial vehicle.

20. (Withdrawn) The apparatus of claim 1 wherein the extendible arm comprises an at least two arm sections joined by at least one mechanical joint to provide for the slideable movement of the at least two arm sections in respect to each other, the extendible arm comprising:

a first arm section attached to the body of interior cargo space of the first airborne aerial vehicle via a flexible base unit that provides freedom of multi-axis movement; one or more intermediate arm sections to connect the first arm section to a second arm section;

a second arm section comprising a foldable aerodynamic control surface assembly to provide for the lift for the ordnance and aerodynamic control of the arm during movement of the arm between the first airborne aerial vehicle and the second airborne aerial vehicle;

at least one actuator unit to provide for slideable movement of the arm sections in respect to each other;

an externally mounted ordnance conveyor mechanism to provide for the transfer of the at least one ordnance unit from the first airborne aerial vehicle to the second airborne aerial vehicle, the ordnance conveyor mechanism comprising:

a moveable ordnance carriage cradle device to carry the at least one ordnance unit along the extended mechanical arm from the first arm section of the mechanical arm via the intermediate arm sections of the mechanical arm to the second arm section of the mechanical arm in order to transfer the at least one ordnance unit between the first airborne aerial vehicle and the second airborne aerial vehicle; and

at least two movement direction bars extended along the mechanized arm sections in order to provide support and direction to the moveable ordnance carriage cradle device; and

a power generator to provide power for the movement of the ordnance carriage cradle device along the at least two interlinked arm sections of the arm.

21. (Withdrawn) The apparatus of claim 20 wherein the moveable ordnance carriage cradle device coupled to the ordnance conveyor mechanism associated with the arm, the ordnance carriage cradle device comprising:

a cradle body to support operational elements of the ordnance carriage cradle device;

at least two ordnance unit positioning bars to provide upward movement to the at least one ordnance unit where the ordnance unit is positioned in relation to the pylon;

at least two ordnance unit gripping arms to hold the at least one ordnance unit on the ordnance carriage cradle during the transfer of the at least one ordnance unit between the first airborne aerial vehicle and the second airborne aerial vehicle; and

a guidance boom device attached to the cradle body to provide in the final phase of the ordnance transfer the establishment of contact with an engagement rod installed on the pylon.

22. (Previously presented) The apparatus of claim 1 wherein the first airborne aerial vehicle is a manned cargo aircraft.

23. (Previously presented) The apparatus of claim 22 wherein the first airborne aerial vehicle is a Lockheed Martin C-130 Hercules.

24. (Previously presented) The apparatus of claim 1 wherein the first airborne aerial vehicle is an unmanned or an uninhabited aircraft.

25. (Previously presented) The apparatus of claim 1 wherein the second airborne aerial vehicle is a manned aircraft.

26. (Previously presented) The apparatus of claim 1 wherein the second airborne aerial vehicle is an unmanned or uninhabited aerial vehicle.

27. (Previously presented) The apparatus of claim 1 wherein the first aerial vehicle and the second aerial vehicle are space platforms.

28. (Currently amended) A method for air-to-air transfer of at least one ordnance unit from a first airborne aerial vehicle to a second airborne aerial vehicle, the method comprising:

loading the at least one ordnance unit into an ordnance storage rack installed within an internal cargo space of the first airborne aerial vehicle;

transferring the at least one ordnance unit from the ordnance storage rack installed within the cargo space of the first airborne aerial vehicle into an ordnance carriage cradle associated with a manipulable, extendible arm secured at a first end to the first airborne aerial vehicle while a second end is provided with a freedom of movement to enable bi-directional, movement of the second end between the first airborne aerial vehicle and the second airborne aerial vehicle,

wherein the ordnance carriage cradle holds the at least one ordnance unit from the first airborne aerial vehicle to the second airborne aerial vehicle and said at least one ordnance unit is transferred externally to the extendible arm;

manipulating the extendible arm to provide for the bi-directional, movement of the arm between the first airborne aerial vehicle and the second airborne aerial vehicle.

29. (Previously presented) The method of claim 28 further comprising:

establishing contact between the at least one ordnance unit or the at least one ordnance assembly and the second airborne aerial vehicle; and

attaching the at least one ordnance unit or the at least one ordnance assembly to a pylon of the second airborne aerial vehicle.

30. (Previously presented) The method of claim 28 further comprising establishing contact between the second end of the arm and the second airborne aerial vehicle via the manipulation of the arm.

31. (Previously presented) The method of claim 28 further comprising uploading the ordnance unit on an external or internal weapon station on the second airborne aerial vehicle.

32. (Previously presented) The method of claim 28 further comprises:

disconnecting the second end of the arm from the at least one ordnance unit or from the at least one ordnance assembly;

stabilizing the at least one ordnance unit or the at least one ordnance assembly to a pylon; and

fuzing the at least one ordnance unit or the at least one ordnance unit attached to the at least one ordnance assembly.

33. (Previously presented) The method of claim 28 further comprises retracting the manipulable, extendible arm at the completion of the ordnance transfer procedure into the internal cargo space of the first airborne aerial vehicle.

34. (Withdrawn) The method of claim 28 further comprises feeding the at least one ordnance unit via an internally installed conveyor mechanism associated with the arm from the first airborne aerial vehicle to the second airborne aerial vehicle.

35. (Withdrawn) The method of claim 28 further comprises feeding the at last one ordnance unit via an externally installed ordnance conveyor mechanism associated with the extendible, manipulable arm from the first airborne aerial vehicle to the second airborne aerial vehicle.

36. (Withdrawn) The method of claim 28 further comprises controllably moving the ordnance carriage cradle carrying the at least one ordnance unit or the at least one ordnance assembly from the first airborne aerial vehicle to the second airborne aerial vehicle along the extended arm assembly where the second end of the arm assembly.

37. (Cancelled)

38. (Cancelled)

39. (Previously presented) The method of claim 28 further comprises a step of aborting the ordnance transfer comprises a retrieval of the extendible arm.

40. (Previously presented) The method of claim 39 wherein the step of aborting the ordnance transfer comprises jettisoning of the arm or the ordnance, or the ordnance carriage cradle or at least one part of the arm.

41. (Previously presented) The apparatus according to claim 1, further comprises an extendible arm assembly attached to the first airborne aerial vehicle, the arm first end is attached to the body of the first airborne aerial vehicle, the arm second end provided with freedom of movement;